
Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: markspencer

Timestamp: [year=2009; month=12; day=4; hr=15; min=9; sec=6; ms=792;]

Validated By CRFValidator v 1.0.3

Application No: 10542284 Version No: 2.0

Input Set:

Output Set:

Started: 2009-11-25 11:53:43.786

Finished: 2009-11-25 11:53:48.419

Elapsed: 0 hr(s) 0 min(s) 4 sec(s) 633 ms

Total Warnings: 3

Total Errors: 0

No. of SeqIDs Defined: 99

Actual SeqID Count: 99

Error code		or code	Error Description											
1	M	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(81)		
1	M	213	Artificial	or	Unknown	found	in	<213>	in	SEQ	ID	(82)		
1	ΙΛĪ	213	Artificial	or	IInknown	found	in	<213>	in	SEO	TD	(83)		

<110> Wyeth Holdings Corporation Farley, John Erwin Hoiseth, Susan Kay <120> METHODS FOR INCREASING NEISSERIA PROTEIN EXPRESSION AND COMPOSITIONS THEREOF <130> AM100238 <140> 10542284 <141> 2006-11-15 <150> PCT/US04/000800 <151> 2004-01-13 <150> 60/440,244 <151> 2005-01-15 <160> 99 <170> PatentIn version 3.4 <210> 1 <211> 1110 <212> DNA <213> Neisseria meningitidis (group B) <400> 1 60 atggatgtca gcctgtacgg cgaaatcaaa gccggcgtgg aaggcaggaa catccagctg cagttgaccg aaccgctccc aaatattcaa cctcaggtta ctaagcgcaa aagccgcatc 120 aggacgaaaa tcagcgattt cggctcgttt atcggcttta aggggagtga ggatttgggc 180 gaagggctga aggctgtttg gcagcttgag caagacgtat ccgttgccgg cggcggcgc 240 300 tcccagtggg gcaacaggga atcctttatc ggcttggcag gcgaattcgg tacgctgcgc gccggtcgcg ttgcaaatca gtttgacgat gccagccaag ccattgatcc ttgggacagc 360 aataatgatg tggcttcgca attgggtatt ttcaaacgcc acgacgatat gtcggtttcc 420 gtacgctacg attcccccga attttccggt tttagcggca gcgtccaatt cgttccggcc 480 caaaacagca agtccgccta tacgccggct cattttgttc agaataagca aaatcagcgg 540 600 cetacteteg tteeggetgt tgteggeaag ceggggtegg atgtgtatta tgeeggtetg aattacaaaa atggcggttt tgccgggaac tatgccttta aatacgcgaa acacgccaat 660 gtgggccgtg atgcttttga gttgttcttg atcggcagcg cgacgagtga tgaagccaaa 720 ggtaccgatc ccttgaaaaa ccatcaggta caccgcctga cgggcggcta tgaggaaggc 780 ggcttgaatc tcgccttggc ggcccagttg gatttgtctg aaaatggcga caaagccaaa 840 accaaaaaca gtacgaccga aattgccgcg actgcttcct accgcttcgg taatgcagtt 900 ccacgcatca gctatgccca tggtttcgac ttgatcgaac gcggtaaaaa aggcgaaaat 960 accagetacg atcaaatcat egeeggegtt gattatgatt tttecaaacg caetteegee 1020 atcgtgtctg gcgcttggct gaaacgcaat accggcatcg gcaactacac tcaaattaat 1080 1110 gccgcctccg tcggtttgcg ccacaaattc

<210> 2 <211> 370 <212> PRT <213> Neisseria meningitidis (group B)

Met 1	Asp	Val	Ser	Leu 5	Tyr	Gly	Glu	Ile	Lys 10	Ala	Gly	Val	Glu	Gly 15	Arg
Asn	Ile	Gln	Leu 20	Gln	Leu	Thr	Glu	Pro 25	Leu	Pro	Asn	Ile	Gln 30	Pro	Gln
Val	Thr	Lys 35	Arg	Lys	Ser	Arg	Ile 40	Arg	Thr	Lys	Ile	Ser 45	Asp	Phe	Gly
Ser	Phe 50	Ile	Gly	Phe	Lys	Gly 55	Ser	Glu	Asp	Leu	Gly 60	Glu	Gly	Leu	Lys
Ala 65	Val	Trp	Gln	Leu	Glu 70	Gln	Asp	Val	Ser	Val 75	Ala	Gly	Gly	Gly	Ala 80
Ser	Gln	Trp	Gly	Asn 85	Arg	Glu	Ser	Phe	Ile 90	Gly	Leu	Ala	Gly	Glu 95	Phe
Gly	Thr	Leu	Arg 100	Ala	Gly	Arg	Val	Ala 105	Asn	Gln	Phe	Asp	Asp 110	Ala	Ser
Gln	Ala	Ile 115	Asp	Pro	Trp	Asp	Ser 120	Asn	Asn	Asp	Val	Ala 125	Ser	Gln	Leu
Gly	Ile 130	Phe	Lys	Arg	His	Asp 135	Asp	Met	Ser	Val	Ser 140	Val	Arg	Tyr	Asp
Ser 145	Pro	Glu	Phe	Ser	Gly 150	Phe	Ser	Gly	Ser	Val 155	Gln	Phe	Val	Pro	Ala 160
Gln	Asn	Ser	Lys	Ser 165	Ala	Tyr	Thr	Pro	Ala 170	His	Phe	Val	Gln	Asn 175	Lys
Gln	Asn	Gln	Arg 180	Pro	Thr	Leu	Val	Pro 185	Ala	Val	Val	Gly	Lys 190	Pro	Gly
Ser	Asp	Val 195	Tyr	Tyr	Ala	Gly	Leu 200	Asn	Tyr	Lys	Asn	Gly 205	Gly	Phe	Ala
Gly	Asn 210	Tyr	Ala	Phe	Lys	Tyr 215	Ala	Lys	His	Ala	Asn 220	Val	Gly	Arg	Asp
Ala 225	Phe	Glu	Leu	Phe	Leu 230	Ile	Gly	Ser	Ala	Thr 235	Ser	Asp	Glu	Ala	Lys 240
Gly	Thr	Asp	Pro	Leu 245	Lys	Asn	His	Gln	Val 250	His	Arg	Leu	Thr	Gly 255	Gly
Tyr	Glu	Glu	Gly 260	Gly	Leu	Asn	Leu	Ala 265	Leu	Ala	Ala	Gln	Leu 270	Asp	Leu

Ser Glu Asn Gly Asp Lys Ala Lys Thr Lys Asn Ser Thr Thr Glu Ile

285

280

275

```
Ala Ala Thr Ala Ser Tyr Arg Phe Gly Asn Ala Val Pro Arg Ile Ser
    290
                        295
Tyr Ala His Gly Phe Asp Leu Ile Glu Arg Gly Lys Lys Gly Glu Asn
305
                    310
                                         315
                                                             320
Thr Ser Tyr Asp Gln Ile Ile Ala Gly Val Asp Tyr Asp Phe Ser Lys
                325
                                    330
Arg Thr Ser Ala Ile Val Ser Gly Ala Trp Leu Lys Arg Asn Thr Gly
                                345
            340
Ile Gly Asn Tyr Thr Gln Ile Asn Ala Ala Ser Val Gly Leu Arg His
                            360
                                                 365
Lys Phe
    370
<210> 3
<211> 1104
<212> DNA
<213> Neisseria meningitidis (group B)
<400> 3
atggatgtta gcctgtacgg cgaaatcaaa gccggcgtgg aaggcaggaa catccagctg
                                                                       60
cagttgaccg aaccgctcca aaatattcaa caacctcagg ttactaagcg caaaagccgc
                                                                      120
                                                                      180
atcaggacga aaatcagcga tttcggctcg tttatcggct ttaagggggag cgaggatttg
                                                                      240
ggcgaagggc tgaaggctgt ttggcagctt gagcaagacg tatccgttgc cggcggcggc
gcgacccgtt ggggcaacag ggaatccttt gtcggcttgg caggtgaatt cggcacgctg
                                                                      300
cqcqccqqcc qcqttqcqaa tcaqtttqac qatqccaqca aaqccattqa tccttqqqac
                                                                      360
agcaataatg ttgtggcttc gcaattgggt attttcaaac gccacgacga tatgccggtt
                                                                      420
teegtaeget aegatteece ggaattttee ggttteageg geagegteea attegtteeg
                                                                      480
                                                                      540
gctcaaaaca gcaagtccgc ctatacgccg gctcattttg ttcagcagac tcctcaaagt
cagectacte tegtteegge tgttgtegge aageeggggt eggatgtgta ttatgeeggt
                                                                      600
ctgaattaca aaaatggcgg ttttgccggg aactatgcct ttaaatacgc gaaacacgcc
                                                                      660
aatgtgggcc gtgatgcttt tgagttgttc ttgctcggca gcgggagtga tgaagccaaa
                                                                      720
ggtaccgatc ccttgaaaaa ccatcaggta caccgcctga cgggcggcta tgaggaaggc
                                                                      780
ggcttgaatc tcgccttggc ggctcagttg gatttgtctg aaaatgccga caaaaccaaa
                                                                      840
aacagtacga ccgaaattgc cgccactgct tcctaccgct tcggtaatgc agttccacgc
                                                                      900
atcagctatg cccatggttt cgactttatc gaacgcggta aaaaaggcga aaataccagc
                                                                      960
tacgatcaaa tcatcgccgg cgttgattat gatttttcca aacgcacttc cgccatcgtg
                                                                     1020
                                                                     1080
tetggegett ggetgaaacg caatacegge ateggeaact acaetcaaat taatgeegee
                                                                     1104
tccgtcggtt tgcgccacaa attc
<210> 4
<211> 368
<212> PRT
<213> Neisseria meningitidis (group B)
<400> 4
Met Asp Val Ser Leu Tyr Gly Glu Ile Lys Ala Gly Val Glu Gly Arg
                5
                                    10
Asn Ile Gln Leu Gln Leu Thr Glu Pro Leu Gln Asn Ile Gln Gln Pro
                                25
Gln Val Thr Lys Arg Lys Ser Arg Ile Arg Thr Lys Ile Ser Asp Phe
```

35

40

45

Gly Ser Phe Ile Gly Phe Lys Gly Ser Glu Asp Leu Gly Glu Gly Leu 5.5 Lys Ala Val Trp Gln Leu Glu Gln Asp Val Ser Val Ala Gly Gly Gly 70 Ala Thr Arg Trp Gly Asn Arg Glu Ser Phe Val Gly Leu Ala Gly Glu 8.5 90 Phe Gly Thr Leu Arg Ala Gly Arg Val Ala Asn Gln Phe Asp Asp Ala 105 100 Ser Lys Ala Ile Asp Pro Trp Asp Ser Asn Asn Val Val Ala Ser Gln 120 Leu Gly Ile Phe Lys Arg His Asp Asp Met Pro Val Ser Val Arg Tyr 135 140 Asp Ser Pro Glu Phe Ser Gly Phe Ser Gly Ser Val Gln Phe Val Pro 150 155 Ala Gln Asn Ser Lys Ser Ala Tyr Thr Pro Ala His Phe Val Gln Gln 165 170 Thr Pro Gln Ser Gln Pro Thr Leu Val Pro Ala Val Val Gly Lys Pro 185 180 190 Gly Ser Asp Val Tyr Tyr Ala Gly Leu Asn Tyr Lys Asn Gly Gly Phe 200 Ala Gly Asn Tyr Ala Phe Lys Tyr Ala Lys His Ala Asn Val Gly Arg 215 220 Asp Ala Phe Glu Leu Phe Leu Gly Ser Gly Ser Asp Glu Ala Lys 235 230 Gly Thr Asp Pro Leu Lys Asn His Gln Val His Arg Leu Thr Gly Gly 245 250 Tyr Glu Glu Gly Gly Leu Asn Leu Ala Leu Ala Ala Gln Leu Asp Leu 260 265 Ser Glu Asn Ala Asp Lys Thr Lys Asn Ser Thr Thr Glu Ile Ala Ala 280 285 Thr Ala Ser Tyr Arg Phe Gly Asn Ala Val Pro Arg Ile Ser Tyr Ala 295 300 His Gly Phe Asp Phe Ile Glu Arg Gly Lys Lys Gly Glu Asn Thr Ser 310 315 320 Tyr Asp Gln Ile Ile Ala Gly Val Asp Tyr Asp Phe Ser Lys Arg Thr Ser Ala Ile Val Ser Gly Ala Trp Leu Lys Arg Asn Thr Gly Ile Gly 345 Asn Tyr Thr Gln Ile Asn Ala Ala Ser Val Gly Leu Arg His Lys Phe 360 365 <210> 5 <211> 1122 <212> DNA <213> Neisseria meningitidis (group B) <400> 5

atggatgtca gcctatacgg cgaaatcaaa gccggcgtgg aaggcaggaa ctaccagctg 60 caattgactg aagcacaagc cgctaacggt ggagcgagcg gtcaggtaaa agttactaaa 120 gttactaagg ccaaaagccg catcaggacg aaaatcagtg atttcggctc gtttatcggc 180 tttaagggga gtgaggattt gggcgacggg ctgaaggctg tttggcagct tgagcaagac 240 gtatccgttg ccggcggcgg cgcgacccag tggggcaaca gggaatcctt tatcggcttg 300 gcaggcgaat tcggtacgct gcgcgccggt cgcgttgcga atcagtttga cgatgccagc 360 420 caagccattg atccttggga cagcaataat gatgtggctt cgcaattggg tattttcaaa 480 cgccacgacg acatgccggt ttccgtacgc tacgattccc ccgaattttc cggtttcagc 540 ggcagcgttc aattcgttcc gatccaaaac agcaagtccg cctatacgcc ggcttattat 600 actaaggata caaacaataa tcttactctc gttccggctg ttgtcggcaa gcccggatcg

```
gatgtgtatt atgccggtct gaattacaaa aatggcggtt ttgccgggaa ctatgccttt
aaatatgcga gacacgccaa tgtcggacgt aatgcttttg agttgttctt gatcggcagc
gggagtgatc aagccaaagg taccgatccc ttgaaaaaacc atcaggtaca ccgtctgacg
ggcggctatg aggaaggcgg cttgaatctc gccttggcgg ctcagttgga tttgtctgaa
aatggcgaca aaaccaaaaa cagtacgacc gaaattgccg ccactgcttc ctaccgcttc
ggtaatgcag ttccacgcat cagctatgcc catggtttcg actttatcga acgcggtaaa
aaaggcgaaa ataccagcta cgatcaaatc atcgccggcg ttgattatga tttttccaaa
cgcacttccg ccatcgtgtc tggcgcttgg ctgaaacgca ataccggcat cggcaactac
actcaaatta atgccgcctc cgtcggtttg cgccacaaat tc
<210> 6
<211> 374
<212> PRT
<213> Neisseria meningitidis (group B)
<400> 6
Met Asp Val Ser Leu Tyr Gly Glu Ile Lys Ala Gly Val Glu Gly Arg
              5
                                  1.0
Asn Tyr Gln Leu Gln Leu Thr Glu Ala Gln Ala Ala Asn Gly Gly Ala
                              25
Ser Gly Gln Val Lys Val Thr Lys Val Thr Lys Ala Lys Ser Arg Ile
                         40
                                             45
Arg Thr Lys Ile Ser Asp Phe Gly Ser Phe Ile Gly Phe Lys Gly Ser
                     55
Glu Asp Leu Gly Asp Gly Leu Lys Ala Val Trp Gln Leu Glu Gln Asp
                 70
                                    75
Val Ser Val Ala Gly Gly Gly Ala Thr Gln Trp Gly Asn Arg Glu Ser
                                  90
               85
Phe Ile Gly Leu Ala Gly Glu Phe Gly Thr Leu Arg Ala Gly Arg Val
           100
                             105
Ala Asn Gln Phe Asp Asp Ala Ser Gln Ala Ile Asp Pro Trp Asp Ser
                          120
Asn Asp Val Ala Ser Gln Leu Gly Ile Phe Lys Arg His Asp Asp
                            140
                     135
Met Pro Val Ser Val Arg Tyr Asp Ser Pro Glu Phe Ser Gly Phe Ser
Gly Ser Val Gln Phe Val Pro Ile Gln Asn Ser Lys Ser Ala Tyr Thr
                                 170
               165
Pro Ala Tyr Tyr Thr Lys Asp Thr Asn Asn Asn Leu Thr Leu Val Pro
          180 185 190
Ala Val Val Gly Lys Pro Gly Ser Asp Val Tyr Tyr Ala Gly Leu Asn
                          200
Tyr Lys Asn Gly Gly Phe Ala Gly Asn Tyr Ala Phe Lys Tyr Ala Arg
                                        220
                     215
His Ala Asn Val Gly Arg Asn Ala Phe Glu Leu Phe Leu Ile Gly Ser
Gly Ser Asp Gln Ala Lys Gly Thr Asp Pro Leu Lys Asn His Gln Val
               245
                                  250
His Arg Leu Thr Gly Gly Tyr Glu Glu Gly Gly Leu Asn Leu Ala Leu
           260
                              265
                                                2.70
Ala Ala Gln Leu Asp Leu Ser Glu Asn Gly Asp Lys Thr Lys Asn Ser
                          280
Thr Thr Glu Ile Ala Ala Thr Ala Ser Tyr Arg Phe Gly Asn Ala Val
                      295
                                        300
Pro Arg Ile Ser Tyr Ala His Gly Phe Asp Phe Ile Glu Arg Gly Lys
                  310
                                      315
```

Lys Gly Glu Asn Thr Ser Tyr Asp Gln Ile Ile Ala Gly Val Asp Tyr

660 720

780

900

960

1020

1080

1122

840

325 330 335

Asp Phe Ser Lys Arg Thr Ser Ala Ile Val Ser Gly Ala Trp Leu Lys 340 345 350

Arg Asn Thr Gly Ile Gly Asn Tyr Thr Gln Ile Asn Ala Ala Ser Val 355 360 365

Gly Leu Arg His Lys Phe

<210> 7

<211> 1113

<212> DNA

<213> Neisseria meningitidis (group B)

<400> 7

atggatgtca gcctatacgg cgaaatcaaa gccggcgtgg aaggcaggaa ctaccagctg 60 caattgactg aagcacaagc cgctaacggt ggagcgagcg gtcaggtaaa agttactaag 120 gccaaaagcc gcatcaggac gaaaatcagt gatttcggct cgtttatcgg ctttaagggg 180 240 agcgaggatt tgggcgaagg tctgaaagct gtttggcagc ttgagcaaga cgtatccgtt gccggcggcg gcgcgaccca gtggggcaac agggaatcct ttatcggctt ggcaggcgaa 300 ttcggtacgc tgcgccgg tcgcgttgcg aatcagtttg acgatgccag ccaagccatt 360 gatccttggg acagcaacaa tgatgtggct tcgcaattgg gtattttcaa acgccacgac 420 480 gatatgccgg tttctgtacg ctacgactct ccggactttt ccggtttcag cggcagcgtt 540 caattegtte egatecaaaa cageaagtee geetataege eggeteatgt tgttgtgaat 600 aacaaggttg ctactcacgt tccggctgtt gtcggcaagc ccggatcgga tgtgtattat gccggtctga attacaaaaa tggcggtttt gccgggaact atgcctttaa atatgcgaga 660 cacgccaatg teggacgtaa tgettttgag ttgttettga teggeagege gaegagtgat 720 caagecaaag gtacegatee ettgaaaaac cateaggtac acegeetgae gggeggetat 780 840 gaggaaggcg gcttgaatct cgccttggcg gctcagttgg atttgtctga aaatgccgac 900 aaaaccaaaa acagtacgac cgaaattgcc gcgactgctt cctaccgctt cggtaatgca gttccacgca tcagctatgc ccatggtttc gacttgatcg aacgcggtaa aaaaggcgaa 960 aataccagct acgatcaaat catcgccggc gttgattatg atttttccaa acgcacttcc 1020 gccatcgtgt ctggcgcttg gctgaaacgc aataccggca tcggcaacta cactcaaatt 1080 1113 aatgccgcct ccgtcggttt gcgccacaaa ttc

<210> 8

<211> 371

<212> PRT

<213> Neisseria meningitidis (group B)

<400> 8

Met Asp Val Ser Leu Tyr Gly Glu Ile Lys Ala Gly Val Glu Gly Arg 1.0 Asn Tyr Gln Leu Gln Leu Thr Glu Ala Gln Ala Ala Asn Gly Gly Ala 20 25 Ser Gly Gln Val Lys Val Thr Lys Ala Lys Ser Arg Ile Arg Thr Lys Ile Ser Asp Phe Gly Ser Phe Ile Gly Phe Lys Gly Ser Glu Asp Leu 55 60 Gly Glu Gly Leu Lys Ala Val Trp Gln Leu Glu Gln Asp Val Ser Val 75 7.0 Ala Gly Gly Gly Ala Thr Gln Trp Gly Asn Arg Glu Ser Phe Ile Gly 90 Leu Ala Gly Glu Phe Gly Thr Leu Arg Ala Gly Arg Val Ala Asn Gln 105 100 110 Phe Asp Asp Ala Ser Gln Ala Ile Asp Pro Trp Asp Ser Asn Asp Asp 115 120 125

Val Ala Ser Gln Leu Gly Ile Phe Lys Arg His Asp Asp Met Pro Val

135 140 130 Ser Val Arg Tyr Asp Ser Pro Asp Phe Ser Gly Phe Ser Gly Ser Val 150 155 160 Gln Phe Val Pro Ile Gln Asn Ser Lys Ser Ala Tyr Thr Pro Ala His 165 170 175 Val Val Asn Asn Lys Val Ala Thr His Val Pro Ala Val Val Gly 180 185 190 Lys Pro Gly Ser Asp Val Tyr Tyr Ala Gly Leu Asn Tyr Lys Asn Gly 195 200 205 Gly Phe Ala Gly Asn Tyr Ala Phe Lys Tyr Ala Arg His Ala Asn Val 210 215 220 Gly Arg Asn Ala Phe Glu Leu Phe Leu Ile Gly Ser Ala Thr Ser Asp 230 235 240 225 Gln Ala Lys Gly Thr Asp Pro Leu Lys Asn His Gln Val His Arg Leu 245 250 255 Thr Gly Gly Tyr Glu Glu Gly Gly Leu Asn Leu Ala Leu Ala Gln 265 270 260 Leu Asp Leu Ser Glu Asn Ala Asp Lys Thr Lys Asn Ser Thr Th